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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,587	08/29/2003	Pratima Bajpai	016260-9005-US002	9149
23510	7590	10/14/2005	EXAMINER	
MICHAEL BEST & FRIEDRICH, LLP			KINNEY, ANNA L	
ONE SOUTH PINCKNEY STREET			ART UNIT	PAPER NUMBER
P O BOX 1806				1731
MADISON, WI 53701				

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/652,587	BAJPAI ET AL.	
	Examiner	Art Unit	
	Anna Kinney	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 July 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4 and 12-17 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,4 and 12-17 is/are rejected.
- 7) Claim(s) 1 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed July 25, 2005 have been fully considered but they are not persuasive.

The Examiner acknowledges that claims 18 and 19 have been cancelled.

In response to applicant's argument that Baecker does not disclose what any such cost savings would be in relation to the quality of paper produced (Remarks, p. 5), this is not the basis of the rejections, nor is this a claimed feature of applicant's invention.

In response to applicant's argument (Remarks, p. 5, 6, 7) that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivations have been set out in the revised rejections, below.

In response to applicant's argument that the references fail to show certain features of applicant's invention (Remarks, p. 6), it is noted that the features upon which applicant relies (i.e., that biokraft pulping of eucalyptus would produce paper "which has a higher strength than that made from purely kraft pulping process") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the references fail to teach all the limitations of claim 12 (Remarks, p. 9), the Examiner disagrees. Baecker discloses that the wood chips are inoculated with the fungus (col. 2, lines 18-23), and clearly indicates that adding nutrients is optional (col. 2, lines 32-37; "may include").

In response to applicant's argument that the prior art does not suggest a reasonable expectation of success, the Examiner disagrees. The Baecker patent broadly covers wood chips, which it defines as comprising mainly amorphous lignin and fibrous cellulose bound together by hemicellulose (col. 1, lines 6-8). Eucalyptus chips fit this description. It appears from Baecker that it would be reasonable to use the invention with any wood chips. Absolute predictability is not necessary in establishing obviousness. The lack of results provided by Baecker does not constitute a lack of reasonable expectation of success. As further evidence, Pearce et al ("Screening lignin degrading fungi for biomechanical pulping of eucalypt wood chips", Proceedings 49th Appita Annual General Conference, Hobart Tasmania, Australia, April 2-7, 1995, pp. 347-351 – applicant supplied) discloses treatment of eucalypt chips (p. 347, col. 1, Summary, lines 1-3) using *Phanerochaete chrysosporium* (p. 347, col. 2, lines 8-12).

The Examiner notes the applicant's argument that it would be obvious to try to use eucalyptus in a biokraft pulping procedure. The rejection of claims 1, 2, 4, 12-14, and 16 provides a motivation to combine the references to establish obviousness under

35 U.S.C. 103(a). In the absence of evidence to the contrary, the Examiner considers that obviousness has been established.

The declaration under 37 CFR 1.132 filed July 25, 2005 is insufficient to overcome the rejection of claims 1, 2, 4, and 12-17 based upon Baecker in View of Yang, or with respect to claims 15 and 17, Backer in view of Yang and further in view of Akhtar, applied under 35 U.S.C. 103, as set forth in the last Office action because: the showing is not commensurate in scope with the claims. The declaration submitted by Dr. Akhtar alleges to provide evidence of unexpected results. However, the results provided in the Exhibits are sufficiently different to either the prior art or the results in the specification that the Examiner cannot discern unexpected results. Table 1 provides pulping conditions, yield, and kappa numbers for loblolly pine chips either treated or untreated with Ceriporiopsis subvermispora. Dr. Akhtar also claims to have run the same tests on aspen furnish. Comparative results using eucalyptus are not provided with the declaration. Therefore, the Examiner attempted to compare the results with Table 13 from the specification, the only table provided that shows results for eucalyptus pulped with phanerochaete chrysosporium. Ceriporiopsis subvermispora, which is the microorganism used in the tests of the declaration, is not claimed in the instant application, after a species restriction, mailed November 12, 2004. The applicant has not established that the results from the two microorganisms would be the same. The active alkali charges are not the same between the declaration and the specification. Nor does the Examiner see evidence that the remaining process variables are the same. It appears that Dr. Akhtar has provided data corresponding with

the tertiary reference (Akhtar, U.S. Patent '564) alone, without any data representative of the primary reference or of the secondary reference. Furthermore, as mentioned above, Dr. Akhtar has not provided corresponding evidence of results from the claimed invention in the declaration. In the absence of comparable evidence, the Examiner cannot consider this declaration as proof of surprising and unexpected results.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either on an application data sheet or supplemental oath or declaration.

Claim Objections

Claim 1 is objected to because of the following informalities: in line 2 of the claim, the word "in" is extraneous and should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 12-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baecker et al (U.S. Patent 5,851,351) in view of Yang et al ("Bleaching of eucalyptus kraft pulp with the EnZone process", TAPPI Journal, Vol. 76, no. 7, July 1993, pp. 91-96).

With respect to claim 1, Baecker et al discloses a method for producing paper pulp for use in the making of paper from wood chips (col. 1, lines 8-11), comprising the steps of: inoculating the wood chips with white rot fungus which is Phanerochaete chrysosporium (col. 3, lines 31-34); b) fermenting the wood chips so as to cause a propagation of the fungus through the wood chips and allow the fungus to modify lignin (i.e., incubation; col. 4, lines 13-19 and col. 3, lines 7-9); and c) pulping of the degraded wood chips by a known chemical pulping process (col. 1, lines 45-56 and col. 4, line 65 – col. 5, line 4).

Baecker et al does not disclose expressly that the wood chips are eucalyptus, or that the chemical pulping process is kraft.

Yang et al discloses that the wood chips are eucalyptus and the chemical pulping process is kraft.

With respect to claim 2, Baecker does not disclose expressly the further step of bleaching the kraft pulp by a known multistage bleaching process.

However, Baecker et al does disclose bleaching the pulp (col. 1, lines 11-13).

Yang et al discloses the step of bleaching the kraft pulp by a known multistage bleaching process.

With respect to claim 4, Baecker et al discloses that the fermentation step is a static fermentation step (col. 4, lines 11-25).

With respect to claims 12 and 13, Baecker et al discloses that the wood chips are inoculated with the fungus and without nutrients, or the wood chips are inoculated with the fungus and known nutrients (col. 2, lines 32-37).

With respect to claim 14, Baecker et al does not disclose expressly that the moisture content of the chips prior to the step of inoculation is kept at fibre saturation point or greater. However, Baecker et al does disclose that the wood chips may be steamed (col. 4, lines 1-3), which the Examiner considers saturating the fibers with moisture.

With respect to claim 16, Baecker et al does not disclose that the wood chips are inoculate with 1 to 5 gms inoculum/ton of wood. However, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to optimize the microorganism dosage to achieve satisfactory results.

Baecker et al and Yang et al are analogous art because they are both from the same field of endeavor, that of enzymatically treating cellulosic materials to produce kraft pulp suitable for paper manufacture.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a eucalyptus pulp and to use a kraft pulping process to obtain the invention as specified in claim 1, and to use a multistage bleaching process to obtain the invention as specified in claim 2.

The motivation would have been that, as a hardwood pulp (Abstract, line 4), eucalyptus has a substantially lower lignin content than softwood pulp, and therefore requires fewer dosages of ozone charge to achieve desirable delignification (p. 95, col. 3, line 26 to p. 96, col. 1, line 1), and that total world production of bleached kraft pulp was 23.5 million tons in 1990 (p. 91, col. 1, lines 5-10), and is well-known in the art to be the dominant method of chemical pulp production in the world; and that pulp brightness generally tends to increase as the number of bleaching stages are increased (p. 92, Table IV).

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baecker et al and Yang et al as applied to claim 1 above, and further in view of Akhtar (U.S. Patent 5,620,564).

With respect to claims 15 and 17, Baecker et al and Yang et al do not disclose expressly that said moisture content is 50-55% of the total wood based on a wet weight of the chips, or that the moisture content in the wood during the step of fermentation is 55-65%.

Akhtar discloses that the moisture content is 55-65% of the total wood, which contains one specific endpoint within the claimed range of 50-55% for claim 15, prior to or in inoculation (col. 3, lines 58-63 and col. 4, lines 28-31) and that during incubation, relative humidity is maintained at 65%. Therefor, the Examiner considers the moisture content in the wood during the step of fermentation to also be 55-65%, which contains the same specific endpoints (55, 65) as the claimed range of 55-65% for claim 17.

Baecker et al, Yang et al, and Akhtar are analogous art because they are from the same field of endeavor, that of enzymatically treating cellulosic materials to produce pulp suitable for paper manufacture.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to expect the moisture content as described by Akhtar in the steamed wood chips of Baecker et al to obtain the invention as specified in claims 15 and 17.

The motivation would have been that because conditions of high humidity during the fermentation process will be desired, a relatively high moisture content of the chips prior to fermentation is most desirable, preferably at the fiber saturation point or greater (col. 3, lines 54-63).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,379,495 shows the use of fungi-produced enzymes on Eucalyptus in pulp production. U.S. Patent 6,103,059 shows the use of *Phanerochaete chrysosporium* to pretreat chips prior to the kraft process. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALK


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